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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/588,647

06/15/2007

Kunihito Takaura

1091

9260

27649

7590

08/25/2010

MICHAEL TOBIAS

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SUITE 300

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EXAMINER

ZHU, WEIPING

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/588,647	<b>Applicant(s)</b> TAKAURA ET AL.	
	<b>Examiner</b> WEIPING ZHU	<b>Art Unit</b> 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 June 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 8-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Status of Claims***

1. Claims 8-16 are currently under examination, wherein claim 8 has been amended and claim 16 has been newly added in applicant's amendment filed on June 1<sup>st</sup>, 2010.

### ***Status of Previous Rejections***

2. The previous rejections of claims 8-15 under 35 U.S.C. 103(a) as stated in the Office action dated January 29, 2010 are maintained as follows:

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 8-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goudarzi et al. (US Pub. 2006/0021466 A1)

Claims 8-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goudarzi et al. (US Pub. 2006/0021466 A1) as stated in the Office action dated January 29, 2010.

With respect to the amended feature in claim 8 to limit the content of In in the first solder alloy as already claimed in claims 10, 12 and 14, as stated in the Office action dated January 29, 2010, Goudarzi et al. ('466 A1) does not specify the content of In in the overall composition as claimed in the instant claim 8 and in the first solder alloy

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powder as claimed in the instant claims 10, 12 and 14. However, one of ordinary skill in the art would expect that the contents of In in the overall composition and in the first solder alloy powder of Goudarzi et al. ('466 A1) would overlap the instantly claimed contents because the elements in the first and second solder alloy powders of Goudarzi et al. ('466 A1) are the same as those in the instantly claimed first and second solder alloy powders; the contents of Ag in the first and second solder alloy powders of Goudarzi et al. ('466 A1) overlap the instantly claimed contents; and the difference in the liquidus temperatures of the first and second solder alloy powders required by Goudarzi et al. ('466 A1) overlaps the instantly claimed difference in the main peak temperatures. A prima facie case of obviousness exists. See MPEP 2144.05 I.

With respect to the amendment to correct a typographical error in claim 8, it does not change the scope of the claim. The reason for the rejection of claim 8 as stated in the Office action dated January 29, 2010 is maintained.

With respect to the new claim 16 directed to the limitation of the In content in the overall composition, see the reason for the rejection of the amended feature in claim 8 above.

### ***Response to Arguments***

4. The applicant's arguments filed on June 1<sup>st</sup>, 2010 have been fully considered but they are not persuasive.

First, the applicant argues that the maximum In content in the first alloy and the overall composition of Goudarzi et al. ('466 A1) are only 5% and 4.5% respectively, which are well below the 6% as claimed in claim 8 and 16 respectively. In response, see

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the reason for the rejections of the claimed In contents above. It is noted that Goudarzi et al. ('466 A1) does not limit the In content below 5% for the first solder alloy of a Sn-Ag-In-Bi alloy. The limitation only applies to a Sn-Ag-Cu alloy.

Second, the applicant argues that there is no suggestion in Goudarzi et al. ('466 A1) of a solder paste in which each of a first alloy and a second alloy has three or more components, as set forth in claim 13 and claim 14 which depends from claim 13. In response, the examiner notes that Goudarzi et al. ('466 A1) discloses that the first alloy comprises Sn, Ag and at least one additional metal. Preferably, the at least one additional metal is selected from the group consisting of Cu, Zn, Bi, Ni, and In. More preferably the second alloy comprises Sn and Ag (paragraph [0009]), suggesting that other elements (such as Cu) can be included in the second alloy as desired.

### ***Conclusion***

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Weiping Zhu whose telephone number is 571-272-6725. The examiner can normally be reached on 8:30-16:30 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ Roy King/  
Supervisory Patent Examiner, Art  
Unit 1793

WZ

8/22/2010